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**CLAIMS:**

1. A shear reinforcing component for preventing longitudinal shear failure of a composite element for the building industry, which shear reinforcing component is an elongate member that has been bent into a waveform configuration.

2. The reinforcing component defined in claim 1 wherein the waveform configuration is elected from a group that includes a square wave, a V-shaped, i.e. zig-zag, wave, and a sinusoidal wave.

3. The reinforcing component defined in claim 2 wherein the square wave and the V-shaped wave include straight sections and bends at the ends of the straight sections.

4. The reinforcing component defined in any one of the preceding claims wherein the reinforcing member is a deformed bar.

5. The reinforcing component defined in claim 4 wherein the reinforcing member is a deformed steel bar having a yield stress of at least 400MPa.

6. The reinforcing component defined in claim 4 wherein the reinforcing member is a deformed steel bar having a yield stress of at least 500 MPa.

30 7. A composite element which includes:

(a) a beam;

35 (b) a composite slab positioned on the beam, the composite slab including:

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(i) sheeting;

(ii) concrete cast on the sheeting; and

5 (c) a plurality of shear connectors that connect the composite slab to the beam; and

10 (d) a shear reinforcing component for preventing longitudinal shear failure embedded in the concrete slab, the reinforcing component being an elongate member that has been bent into a waveform configuration and is located to cross potential longitudinal shear failure surfaces and thereby contribute to the longitudinal shear capacity of the composite element.

15 8. The composite element defined in claim 7 wherein the sheeting is profiled and has a plurality of pans separated by parallel ribs.

20 9. The composite element defined in claim 8 wherein the sheeting is positioned so that the ribs are parallel to or transverse to a longitudinal axis of the beam.

25 10. The composite element defined in claim 8 includes a horizontal beam and profiled sheeting that is positioned with the ribs transverse to the longitudinal axis of the beam and the reinforcing component positioned on the ribs and extending along the length of the beam.

30 11. The composite element defined in any one of claims 7 to 10 wherein the shear reinforcing component is positioned flat on underlying components of the composite element and extends in a generally horizontal plane.

35 12. The composite element defined in any one of

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claims 7 to 11 wherein the shear reinforcing component is fully anchored on both sides where it passes through a potential longitudinal shear failure surface.

- 5 13. The composite element defined in any one of claims 7 to 12 wherein the shear reinforcement component is embedded in the slab below upper ends of the shear connectors.
- 10 14. A method of manufacturing a reinforcing component for preventing longitudinal shear failure of a composite element for the building industry, which includes a step of bending an elongate member into a waveform configuration.